



Dear Dr Maths

There is talk in the media saying we are about to go into a recession and that this could have been predicted by looking back at trends from past information. Can maths be used to predict these future trends?

**Peter
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There are a number of mathematical techniques which can be used to predict future patterns and the GCSE Maths syllabus contains some of these ideas, including scatter graphs, time series graphs and difference method number patterns.

The 18th century mathematician Joseph Fourier created techniques which produce greater accuracy in the prediction of pattern. One of the methods used in business today to predict future fluctuations in sales, is called The Fast Fourier Transform, in honour of Fourier's work. For example, taking house price data over the last few months and applying one of these maths techniques, could help to find the likely house price cost in one months time. Similar methods of prediction are used in a variety of industrial areas. The Met Office applies this theory to try and understand tomorrows weather. Accurately predicting long range forecasts can save lives when it comes to freak weather conditions such as tornadoes or severe storms.

Over the years many different theories have been used to help get an approximate feel for how the future may turn out. Such as The Hemline Test which was created by the American analyst George Taylor in the 1920s. He stated that data showed that when times were good skirts got shorter!



1980s



1990s



2008

Other predictions may be more rooted in fact and it is said that when times are hard gold prices rise, as gold is traditionally seen as a safe commodity to invest in.

Here is a puzzle for you to try. In each case find the next number in the pattern:

- a) 1, 3, 9, 27, 81, ?
- b) 4, 7, 12, 19, 28, ?
- c) 1, 8, 11, 69, 96, 101, ?

(A clue for (c) is topsy-turvy)

Write in with your answers and the first correct entry drawn will win a copy of "The Number Puzzler" published by Tarquin.

Do you have a maths question or problem? Write to Dr Maths, Evening Chronicle, Groat Market, Newcastle, NE1 1ED or email: DRMaths@hotmail.co.uk